

U.S. Patent Application No. 10/062,257
Response to Notice of Noncompliant Amendment dated March 1, 2007
Reply to Office Communication of February 22, 2007

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AMENDMENTS TO THE SPECIFICATION:

Please amend the Abstract as follows:

ABSTRACT

The present invention relates to a A tumor antigen peptide capable of inducing and/or activating HLA-A24-restricted and/or HLA-A2-restricted and tumor-specific cytotoxic T lymphocytes. The present invention also relates to a method of functions by providing a polynucleotide encoding the peptide and a complementary strand thereto, a recombinant vector containing the polynucleotide, a transformant containing the recombinant vector, The present invention also relates to a method for producing the peptide, an antibody against the peptide, a compound interacting with these entities and a method for screening for the compound, a pharmaceutical composition utilizing these entities, and a means for the diagnosis utilizing these entities.

Please amend the paragraph on page 13, beginning at line 15 and ending at line 21, as follows:

Among the above-mentioned three peptides capable of inducing CTLs that recognize HLA-A24⁺ tumor cell line, two peptides were found to have a homology on the amino acid sequences, that is Lck486-494 (SEQ ID NO:1) (TFDYLRSVL) and Lck488-497 (SEQ ID NO:2) (DYLRSVLEDF) (amino acid sequence is given both in one-letter symbols and three-letter symbols hereafter). CTLs that recognize the amino acid sequence DYLRSV (subsequence of SEQ ID NO: 2), which is a common region for the two peptides as an epitope, are assumed to have a relevance to tumor rejection.

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Please amend the paragraph on page 14, beginning at line 8 and ending at line 14, as follows:

Peptides according to the present invention also include a peptide that has the amino acid sequence shown by the following formula derived by the amino acid sequence of the above-mentioned homologous peptide, and is recognized at least by HLA-A2402-restricted cytotoxic T lymphocytes: Thr-Phe-Xaa-Xbb-Xcc-Xdd-Xee-Xff- Leu-Xgg-Asp-Xhh-Xii (SEQ ID NO: 10), wherein Xaa is Asp or Glu, Xbb is Tyr or Phe, Xcc is Leu or Ile, Xdd is Arg or Gln, Xee is Ser or Ala, Xff is Val or Phe, Xgg is Glu or Asp, Xhh is Phe or Tyr, and Xii is Phe or Tyr.

Please amend the paragraph on page 36, beginning at line 13 and ending at line 23, as follows:

Thus, three peptides derived from Lck, i.e., Lck208-216 (SEQ ID NO:3) (HYTNASDGL), Lck486-494 (SEQ ID NO:1) (TFDYLRSVL) and Lck488-497 (SEQ ID NO:2) (DYLRSVLEDF) were found to be able to induce CTLs that recognize HLA-A24⁺ tumor cell line. These results suggest that the amino acid sequence DYLRSV, which is the overlapping region for the two peptides Lck486-494 (SEQ ID NO:1) and Lck488-497 (SEQ ID NO:2), is recognized as a tumor antigen epitope by CTLs induced by the peptide, and that this part included in the kinase domain of Lck protein has a relevance to tumor rejection. With attention to this amino acid sequence DYLRSV (subsequence of SEQ ID NO: 2), peptides that are homologous to this sequence were searched for, so that such peptides were found to be included in the amino acid sequence of some tyrosine kinases (Ann. Rev. Biochem. 54: 897-930, 1985) which are belonging to the Src family as well as Lck, as shown in Table 5.